

silicon containing substrate comprising the steps of:

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placing a wafer having a single crystalline silicon containing surface into a ultra-high vacuum (UHV) chemical vapor deposition (CVD) chamber;

heating said silicon containing surface to a temperature in the range from about 475°-850°C, and

flowing a silicon containing gas and a carbon containing gas over said silicon containing surface whereby said silicon carbon layer having an oxygen content of less than 1×10^{17} atoms/cc is formed, wherein said carbon containing gas is selected from the group of molecules containing unsaturated double or triple carbon-carbon bonds.

12. (Amended) The method of claim 1 wherein said silicon carbon alloy is single crystalline.

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13. (Amended) The method of claim 1 wherein said silicon carbon alloy is polycrystalline.

14. (Amended) A method for forming an alloy layer of silicon germanium carbon on a silicon containing substrate comprising the steps of:

placing a wafer having a single crystalline silicon containing surface into a ultra-high vacuum (UHV) chemical vapor deposition (CVD) chamber;

heating said silicon containing surface to a temperature in the range from about 350°-850°C, and

flowing a silicon containing gas, a germanium containing gas and a carbon containing gas over said silicon containing surface whereby said silicon germanium carbon layer having an oxygen content of less than 1×10^{17} atoms/cc is formed, said